



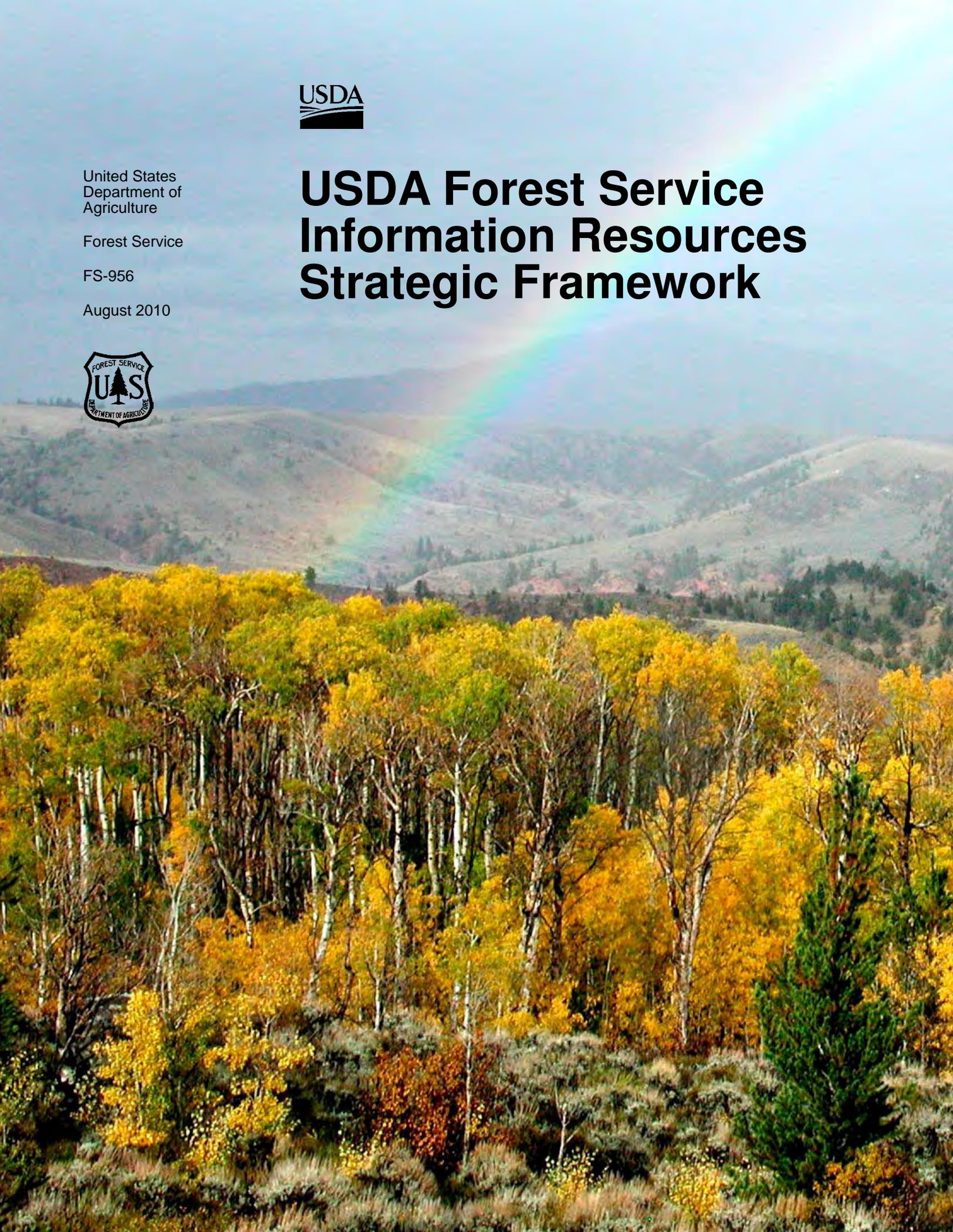
United States
Department of
Agriculture

Forest Service

FS-956

August 2010

USDA Forest Service Information Resources Strategic Framework



The IR Strategic Framework is a living document and process, affected by changes in the world and within the agency and Government. Regular review and update with continued involvement of stakeholders at all levels is required. As conditions (social, economic, business, technology, environmental, regulatory) change, the opportunities and risks to the agency mission will be assessed and the IR Strategic Framework revised to meet those changing conditions. For the most current version of the IR Strategic Framework and its status please see the Forest Service intranet location <http://fsweb.wo.fs.fed.us/ir-strategy/>.

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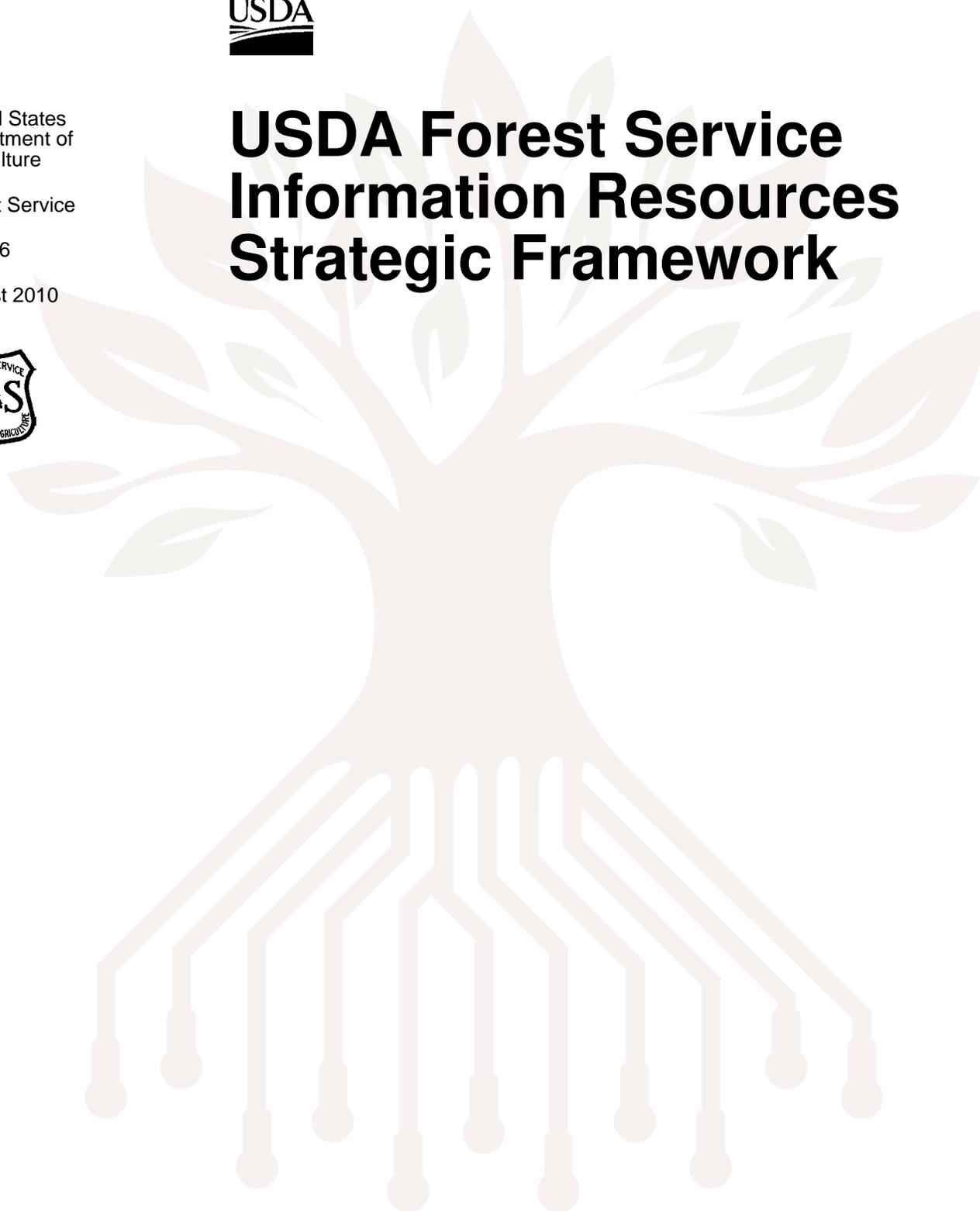
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USDA Forest Service Information Resources Strategic Framework



INFORMATION RESOURCES
STRATEGIC FRAMEWORK



Letter From the Chief

Our agency is a leader in natural resources conservation and stewardship, with our natural resources information and scientific research second to none. People throughout the United States and beyond depend on the Forest Service to protect our Nation’s natural resources and to improve people’s lives through healthy and sustainable ecosystems.

And yet, there is something profoundly different about our work today than ever before in the history of the agency: the pace of change and array of choice that are results of the “information age.” There is no denying that many of us spend as much time using the tools of this age—computers, mobile radios and phones, global positioning and remote sensing systems—as our predecessors used the tools of their age—compass, map, and field glasses. I believe that we could not continue our leadership in natural resources, nor be responsive to our partners or to the public, without our information resources—the information, the technology, and the people—that help us make it all work.

Through every part of the agency and our business we are making significant investments in information resources. These investments, quite simply, are necessary to maintain our ability to carry out our mission. We will continue to make them. An opportunity we have today, however, is to renew our focus on how we manage information resources. We must focus on technology that allows us to work without barriers, focus on how we use applications and information to make the best land management decisions, and focus on new ways to communicate with our wide-ranging and diverse stakeholders using 21st century collaboration tools and approaches.

In this, as in our mission work, we are expected to provide leadership—to use information resources effectively and to be agile in their use. We are up to the challenge. In the Information Resources Strategic Framework, we have defined the vision, beliefs, and mission for information resources and we have committed to realizing three core goals in support of the agency’s mission:

1. To make people more capable with seamless technology.
2. To ensure that people succeed by using information.
3. To achieve new levels of excellence by sharing knowledge and ideas.

The Information Resources Strategic Framework represents a call to action for leadership. It is essential that our investments in this area are used wisely and applied to our most pressing needs. By doing this, employees’ jobs are made easier, overall agency costs can be reduced, and innovations can advance the agency mission.

These landmark results will require, not just the focus of leadership, but recognition across the agency of the vital power of our information resources. Together, let’s use this document as our guide to harnessing that power for our next generation of service.

THOMAS L. TIDWELL
Chief

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“TO HELP BUILD A NEW FOUNDATION FOR THE 21ST CENTURY, WE NEED TO REFORM OUR GOVERNMENT SO THAT IT IS MORE EFFICIENT, MORE TRANSPARENT, AND MORE CREATIVE.”

PRESIDENT BARACK OBAMA, APRIL 25, 2009

“INCREASINGLY DIVERSE URBAN POPULATIONS ARE LOSING THEIR AWARENESS AND KNOWLEDGE OF THE NATURAL SYSTEMS ON WHICH THEY DEPEND. THE FOREST SERVICE MUST CONNECT WITH AND EDUCATE THESE CITIZENS TO EXPAND THEIR UNDERSTANDING OF THE LINKS BETWEEN PEOPLE, THE WAY THEY LIVE, AND THE NATURAL SETTINGS WITHIN WHICH THEY LIVE.”

USDA FOREST SERVICE STRATEGIC PLAN, JULY 2007

“WE’VE GOT TO RECOGNIZE THAT WE CAN’T TREAT THE AMERICAN PEOPLE AS SUBJECTS BUT AS A CO-CREATOR OF IDEAS. WE NEED TO TAP INTO THE VAST AMOUNTS OF KNOWLEDGE...IN COMMUNITIES ACROSS THE COUNTRY. THE FEDERAL GOVERNMENT DOESN’T HAVE A MONOPOLY ON THE BEST IDEAS.”

VIVEK KUNDRA, FEDERAL CIO AT THE WHITE HOUSE, JUNE 1, 2009

1. Introduction

The need for timely, accessible, and meaningful information and technology has never been more fundamental to efficient and effective Government; to the Forest Service, U.S. Department of Agriculture; and to American business success. We recognize that information resources (IR)—taken as the broad collection of technologies, capabilities, and services related to information—have become vital tools for the agency, and for all of Government, to meet the challenges we face.

The first-ever Presidential appointment of a Federal Chief Technology Officer (CTO), Chief Information Officer (CIO), Security Czar, and Chief Performance Officer in early 2009 signaled a shift in how the Federal Government manages information and technology to serve the public. This executive commitment to realizing the goals of transparency, accountability, and efficiency signals an acceleration of the intent to achieve a more fully democratized Government by focusing on innovative ways to reach out to citizens.

The Forest Service invests a substantial part of its budget each year in IR and will be likely to do so for the foreseeable future. The pace of change in the “information age” continues to accelerate at a demanding rate, providing an almost continuous stream of innovations and improvements, each of which may have potential to improve Forest Service capability for mission accomplishment. For these reasons, it is imperative that agency leadership focus on issues related to IR and their relationships to how the agency carries out its work.

This framework articulates a long-term IR vision for the Forest Service that supports the agency mission, while taking into account current and future trends that will have an impact on that mission. It is designed to serve as a critical tool to help agency leadership make informed decisions regarding IR investments, direction, and governance.

Forest Service mission:
Sustain the health, diversity, and productivity of the Nation’s forests and grasslands to meet the needs of present and future generations

1.1 Scope

The scope of the IR Strategic Framework encompasses activities agencywide across all mission areas. It includes the personnel, information, funds, applications, equipment, tools, technology, processes (technical and otherwise), and governance needed to manage IR to meet the internal and external requirements of the agency's mission.

The Clinger-Cohen Act of 1996 defines information resources as "information and related resources, such as personnel, equipment, funds, and information technology" and IR management as "the process of managing information resources to accomplish agency missions and to improve agency performance ..."(44 USC Sec. 3502 (6) and (7))

Guidance for planning and managing this scope of work has been laid down by the 1996 Clinger-Cohen Act¹, which directed executive branch agencies to:

- Focus IR planning to support agency strategic missions
- Implement a planning and investment control process that links to budget formulation and execution
- Rethink and restructure the way agency work is done before investing in information systems

All Forest Service employees are responsible for managing information to ensure accurate, transparent, and effective decisionmaking appropriate to their job and for communicating those decisions, along with knowledge and ideas. It is essential that those entrusted with "caring for the land, and serving people" have the capability to apply information systems, processes, and innovations, as well as the technology on which they depend. To meet this challenge, this strategic framework focuses on the capabilities of people that are derived in part from IR. The scope of this framework encompasses the above guidance and imperatives.

1.2 How This Document Will Be Used

As a strategic framework, this document looks to the future and sets a course for arriving at a desired destination. It is intentionally broad to address all aspects of IR in the agency. We designed the IR strategic framework to be used by leadership to guide agencywide decisionmaking at the highest levels.

The IR Strategic Framework also lays out a set of 5-year objectives, with implementation responsibilities resting with various entities within the agency (e.g., the Chief Information Office (CIO), Geospatial Information Office (GIO), deputy areas, line officers, and staff). These entities should develop their programs of work to efficiently and effectively achieve these objectives. Some of these entities are specifically named in this document to ensure that such linkage occurs.

¹The Clinger-Cohen Act was implemented by direction of the Office of Management and Budget, Circular A-130. http://www.whitehouse.gov/omb/circulars_a130_a130trans4/

A significant level of coordination among the various organizations responsible for IR within the agency will result in the kind of integrated program of work needed to achieve the framework intent. The way in which these IR providers coordinate on a program of work is specifically addressed in the governance capacity area (section 4.3.2).

The IR Strategic Framework is a living document, affected by changes in the world and within the agency and Government. Therefore, regular review and updates with continued involvement of stakeholders at all levels will be required. As conditions (social, economic, business, technology, environmental, regulatory) change, we will assess opportunities and risks to the agency mission and review and revise IR strategies to meet those changing conditions.

The framework should help all employees understand the agency's IR direction. Leadership will use it to guide investment decisions and overall decisionmaking, while staff will use the framework to develop priorities for the IR programs of work. Because of the pervasiveness of IR across the agency, all Forest Service employees should, at a minimum, understand the fundamental concepts of the IR Strategic Framework (IR vision, mission, focus areas, and capacity). In this way, a greater understanding of the relevance of IR to the agency mission work will be gained and, from this, future iterations of this document can benefit from the input of an even larger segment of the agency.

1.3 The Structure of This Document

This document has four primary parts: first is the introduction, which explains several key points to aid the reader's understanding; second is an explanation of large-scale events and trends that were considered as context for this document; third are guiding principles that were foundational to the development of this document; and fourth is the IR Strategic Framework.

The IR Strategic Framework is a set of concise, essential statements (see appendix A) developed by agency leadership to guide strategic decisionmaking and progress assessment related to IR within the agency. Each of these statements (vision, beliefs, mission, mission focus areas, and capacity areas) addresses some part of the agency's perspective on IR and has a specific relationship to the other statements. The relationship among the framework statements is depicted in figure 1.

The statements will have greater meaning and relevance to some readers than others. For example, the IR vision and mission may be more helpful to the broader agency reader, while the IR capacity objectives may have greater utility to a reader more closely involved with providing IR services. However, the framework statements act in concert to create a comprehensive, agencywide IR view to be used at the highest levels of Forest Service decisionmaking.

Each statement is explained in section 4 of this document to enable the reader to understand the context, background, and meaning. Progress indicators and explanations are also given in section 4 for each outcome objective. See appendix C for the guidelines used to develop effective progress indicators.

Terminology and acronyms are defined in appendix D and E, respectively.



Figure 1—Depiction of Information Resources Strategic Framework structure showing relationship among the framework statements. ²

²Adapted for the Information Resources Strategic Framework from the Rebecca Reynolds Consulting (RRC) Strategic Framework Diagram, ©2009, used with permission. Further information on the RRC strategic planning model is included in appendix B and at <http://www.rebeccareynoldsconsulting.com/RRCStrategicPlanningModel>.

2. World Forces

The world in which the Forest Service operates is shaped by an array of driving forces, the most significant of which are increasing population and changing demographics, a rapidly evolving technological environment, the increasing need to manage for the unexpected, increasing citizen expectations for collaboration, changes and variability in the natural environment, and evolving regulation and governmental oversight.

The following emerging and related trends are having a profound impact on the Forest Service at large and, more specifically, on people's capability related to IR. Each trend has opportunity for the agency as well as challenges or risks. Leadership focus with respect to IR, as expressed in the IR Strategic Framework, leverages the opportunities while managing the risk.

2.1 Population Demographics

Changes in national and worldwide population demographics suggest Forest Service customers, as well as the potential workforce, are rapidly evolving in terms of expectations and how they work. A customer base that is increasingly diverse, urban, Internet connected, and digitally empowered will require new methods of communication and outreach.

Potential Opportunity

With increasing turnover in the Federal workforce (e.g., one-third of the Federal workforce is eligible to retire during the next 5 years), the agency has an opportunity to establish itself as an employer of choice. The Forest Service can become an employer of choice by embracing changing demographics and by offering jobs that are highly sought, in part because of 21st century IR that improve employee potential for success.

Associated Risk

Changing demographics also create a risk that Forest Service information and technology will not meet expectations or may not be widely accepted by a new workforce or the public.

2.2 Rapidly Evolving Technology

Technology advancements have had a profound effect on business and government strategy over the past three decades. They continue to change the conditions in which the Forest Service operates, along with the strategic options the agency can pursue.

Potential Opportunity

Emerging technologies (e.g., in social media, online mapping, and unstructured information retrieval through search) offer new ways to collect, manage, and employ information that more fully involves citizens, improves how decisions are informed and “democratizes” the collaboration process. The business of managing public lands must evolve to take advantage of advancements to provide the quality of decisionmaking and level of involvement citizens expect while conserving the resources entrusted to the agency for future generations. These are opportunities that can help the Forest Service redeem its mission in a world where expectations will be determined by the next generation of “digital natives.”³

Associated Risk

The rate of change in technology creates the risk of leaving the current workforce behind and, on the other hand, the risk of being outpaced by the public we serve. The nearly universal access to automated “publishing” of information is causing an explosion in available material, currently doubling available published information every 18 months. The challenge for the agency is to strategically manage its IR in this environment.

2.3 Managing the Unexpected

Challenges occur every day in the world at large that affect the Forest Service. For example, economic downturns, natural disasters, health pandemics, and political upheavals have an impact on the agency’s ability to deliver its mission. The Forest Service also has a long-standing role in successfully responding to catastrophic incidents (e.g., wildland fire, Space Shuttle Columbia disaster, and Hurricane Katrina).

Potential Opportunity

Readiness includes resilience, robustness, and security of Forest Service information infrastructure. Optimally, this readiness allows the agency to take a leadership role in responding to these events.

³ Digital natives are those who have grown up with, highly value, and are very comfortable with advanced technology, collaboration, and easily accessible information. They have not known a world without pervasive information resources such as the Internet or cellular telephones.

Associated Risk

Forces and events, some unpredictable, in the political, social, economic, ecological, and business arena, will affect the agency's capability to carry out its mission. At risk is the capacity for basic readiness to respond to the unexpected with needed information and technology in order to enable the agency's continuity in mission delivery.

2.4 Demand for Borderless Collaboration

Increasing access to information through new and evolving methods is creating a demand for the Government to provide immediate and transparent access to information anytime and anywhere, and to collaborate through a variety of media. These new methods challenge us to make Forest Service information fully accessible to all potential users.

Potential Opportunity

Rapidly evolving technologies provide unprecedented opportunities for unimpeded collaboration. For example, benefits of “crowd sourcing”—the use of networks of contributors to create solutions—have been touted for Government.⁴ The agency also can improve internal and external discussions through increasingly intuitive and transparent around-the-clock information and communication availability, and with the ability to find information from any location.



⁴ Kash, Wyatt. June 2, 2009. Government Computer News. “New Federal CTO Chopra reveals early plans.”

Associated Risk

Until new methods are fully explored and proven, they heighten the risk of compromised information assets, including the threat of cyber terrorism. Another barrier to adoption of collaborative media technologies is full understanding and acceptance by agency personnel, including overcoming process and cultural inertia.

2.5 Environmental Change

Stewardship of natural resources has taken on a new urgency because of the heightened awareness of major environmental issues, such as global climate change, where information can play a vital role. IR will play a key role as industry, governments, and all citizens consider alternative energy and related technology. The Forest Service must contribute and participate in the development of renewable resources and the conservation of nonrenewable resources. Increasingly, secure global exchange of information will be required, even as threats to that exchange increase.

Potential Opportunity

Agency technology infrastructure can improve the sustainability and efficiency of operations. It enhances the ability of the Forest Service to be leaders in land management, protection, and use. Agency information can play a vital role in the understanding of, and ability to adapt to, environmental change.

Associated Risk

Effects of climate change on management of vegetation resources are creating new challenges for wise management of resources. Lack of access to essential information diminishes the agency's ability to provide leadership in this area.

2.6 Increased Consolidation

Continued efforts emphasize reducing duplication of services throughout the Federal Government.

Potential Opportunity

Consolidation and centralization of services can reduce costs, reduce duplication of effort, and create greater opportunities for sharing.

Associated Risk

Consolidation of services can subject more resources to a single point of failure. “One size fits all” solutions in IR always ignore the variety of agency mission and business requirements.

2.7 Safety

Natural resource management is often inherently dangerous, especially for those working in remote locations, and increasingly for those whose work is in fire prevention and suppression or other disaster situations. Forest Service personnel are also subject to risk from illegal activity as they work in remote areas.

Potential Opportunity

Advances in technology enable safe mobile and remote operations and field work. Increasing use of remote sensing and data collection reduces the need for personnel to do field work in remote and potentially dangerous locations. Early consideration of safety in decisions about IR system design and delivery will decrease overall system costs, improve the working environment for employees, and enhance relationships with partners.

Associated Risk

Advances—especially in mobile technology—tend to encourage, for example, “multitasking,” which increases the risk of accidents with already dangerous work.

2.8 Law, Policy, and Regulation

A large body of law and policy underpins and guides the mission and work of the Forest Service. These range from the establishment of the agency, its mission, and how it carries out its work, to requirements ensuring accessibility for all. Since the 1920s, and especially the 1970s, increasing pressure for competing uses of limited resources has given rise to a stream of laws designed to ensure that all interests are considered.⁵ Likewise, Federal law, policy, and regulation more specific to IR⁶ continues to evolve, reflecting society’s increasing desire to ensure that access to information and technology is inclusive, thereby enhancing capability for all, without jeopardizing individual privacy and security. Some examples of those specific to IR include the Clinger-Cohen Act of 1996, Office of Management and Budget (OMB) Circular A-130, and Section 508 of the Rehabilitation Act, as amended, 1998. See also appendix F.

⁵ Copstead, R., Summary of Historical and Legal Context for Water / Road Interaction; 1997; Forest Service (internal); San Dimas Technology Development Center report no. 9777-1815.

⁶ U.S. Government, Federal Chief Information Officers (CIOs) Council, <http://www.cio.gov/index.cfm?function=showdocs&category=it%20related%20laws%20and%20regulations>

Potential Opportunity

The legal and policy framework within which the Forest Service operates demands that the agency evaluate natural resource and social values that in some cases are competing. The opportunity to leverage IR to support decisionmaking in this environment is one that the agency cannot afford to treat casually. IR holds a key for the agency to improve its mission performance. For example, decision-informing processes can benefit from Internet-based collaboration and social networking tools; shared information, data collection, and storage systems can improve the agency's capacity to carry out legally mandated decision processes. Evaluating and revising policies that address legal requirements for IR (e.g., the integration of universal design to address section 508) will enhance functionality for all users.

Associated Risk

Inadequate attention to existing laws and policies not only puts the agency in jeopardy, but also prevents the agency from benefitting from their intent. The risk is in responding to existing law and policy for compliance rather than fully engaging the underlying purpose to seek benefits. For example, building IR solutions based on universal design concepts offers the possibility of enhancing all users' experience. This benefit could be lost without sufficient attention to the intent of section 508.

3. Guiding Principles

IR Strategic Framework guiding principles are high priority, best-practice attributes that should be considered and addressed for all strategic decisionmaking, including investment decisions. These principles guide how the work of implementing the IR Strategic Framework is accomplished. Some of these principles are also reflected in the goals and objectives, where they are noticeably out of balance with our desired future.

3.1 Accessible

Information, systems, and processes are comparable and usable for all employees, partners, and the public. Individuals can obtain information quickly and easily. When we consider inclusive access in the design phase, we develop products that enhance capability for everyone. For example, sidewalk ramps have proven to be an adaptation that improves capability for walkers, joggers, bicyclists, and others, not only those in wheel chairs.

3.2 Available

IR systems function when needed to meet people's needs. This basic principle recognizes that IR cannot fulfill their function if they are not available when and where they are needed. Many of the progress indicators assume this basic availability as intrinsic to the desired outcome objective for which progress is measured.

3.3 Customer Service Oriented

Customer experience is of the highest value across all information resource efforts. Quality customer experience is the result of a strong commitment to quality customer service. There are numerous progress indicators throughout the IR Strategic Framework that measure aspects of quality customer service.

3.4 Ease of Use

The focus of our information and systems is on their use to make decisions and manage activities at all levels of the agency. Information is purposeful and designed to achieve a specific and well defined business need. Products and processes are developed with the experience, capability and needs of customers in mind. Business priorities drive the technology.

3.5 Effective

Systems and processes achieve the most important outcomes that further the mission and goals of the agency (e.g., the agency mission drives the technology). Performance of approved projects is a criterion for future funding decisions.

3.6 Efficient and Cost Effective

Systems and processes achieve intended outcomes with as little time, effort, and cost as possible. We make choices that maximize our IR investments by using the IR Strategic Framework in our decision process, monitoring progress, and adjusting as needed. We deliver solutions that provide benefits that were intended. Initiatives take feasibility into account, including the complexity of the investment, the risks and proposed treatment of those risks, and workforce capacity.

3.7 Flexible

We design systems and processes so they can be adapted when changes in customer needs occur. Business and mission requirements are subject to world forces and trends. Technology advances in particular can also create new opportunities and risks for IR in meeting agency mission needs. When we integrate flexibility, we efficiently respond to these changes.



3.8 Innovative

We improve options for achieving our IR vision by encouraging innovation from all sectors of our customer base and service delivery areas. The intent of innovation is improvements and transformations to advance how we accomplish our work and adapt to world forces.

3.9 Integrated

Systems function seamlessly to accomplish the business of the agency. Integration is cross system and interagency. This does not mean that we control all systems through the same authority, but rather that they work together.

3.10 Reliable

Systems and processes perform as needed under routine circumstances, as well as under adverse or unexpected circumstances. Appropriate redundancy and continuity of operations plans are in place.

3.11 Safe

We give the safety of our employees the uppermost consideration in decisions about IR system design and delivery. The safety of our IR providers is particularly important for consideration in capacity areas, such as physical infrastructure, but also as we consider IR across the agency. For example, IR brings an array of communication options to safety programs for improving awareness and understanding of safety issues.

3.12 Secure

We achieve an appropriate balance in securing our systems and information from inappropriate access and unauthorized use while maintaining a customer focus on flexibility, efficiency, and ease of use.

4. Information Resources Strategic Framework

The IR Strategic Framework is comprised of a set of specific statements representing leadership's vision and intent for IR in the Forest Service. These statements are presented here with explanatory material that captures the major discussion points, context, and definitions of terms that were foundational to the development of the framework. The intent is to provide a synopsis and examples of the leadership conversation about IR that led to the specific statements comprising this IR Strategic Framework.

4.1 Information Resources Vision, Beliefs, Mission

IR Vision: Our world community thrives as information connects people to the land.

IR Beliefs:

- Shared information builds trust and informs people.
- Informed people make wise decisions.
- Wise decisions sustain the land.

IR Mission: We deliver information the agency needs to fulfill its mission.

The first statements of the framework address the agency's vision, beliefs, and mission for IR, holding them as a unified concept. Together, these statements express the agency's highest level view of IR: its desired future, the essential beliefs on which it depends, and what IR does for whom.

The IR vision captures several important concepts. First, the Forest Service provides benefits for citizens throughout the world ("our world community"). As people are better connected to information, knowledge, ideas, discussion, and policy about air, land, and water resources ("the land"), they are better connected to those resources and to each other in community. This vision for IR is aligned with, and will help to enable, the Forest Service mission.⁷

The IR belief statements represent core and deeply held ideas about how people value information and, by extension, IR. These beliefs explain the link between IR and the agency mission.

The IR mission statement reflects the essential support function it plays within the agency. Central to this statement is that the agency mission drives the priorities of those providing service.

⁷ See Forest Service Manual section 1020.21 (mission) and section 1020.22 (vision), <http://www.fs.fed.us/im/directives/fsm/1000/1020.doc>.

4.2 Focus Areas, Goals, Objectives, Progress Indicators

The IR mission is described by central focus areas. The focus areas for the framework recognize the role of IR, which is to ensure and enhance people’s capability. High-performing organizations realize that efficient and effective delivery of IR is more likely when leadership focuses on outcomes that benefit and enable customers and less on simply becoming more efficient at delivering a described set of services or the latest innovation.

The intent is for the IR focus areas to allow the agency to view IR differently and, in so doing, integrate this essential support area across agency deputy, line, and staff areas. The desired outcome from these focus areas is to realize a much greater level of capability and potential for people to deliver agency mission work.

Three focus areas for this framework—bridge technology, apply information, and share knowledge and ideas—describe how capability for people is magnified through IR. These focus areas express the continuum through which people’s capability is enhanced by IR.

First, individuals gain the use of seamless technology tools to increase their abilities. Leadership focuses on making people’s work easier and more effective through what should be “invisible” technology functionality (interoperability) even though a number of technologies are in use. We seamlessly “bridge” the technology.

Secondly, individuals apply information specific to their jobs to become increasingly effective, productive, and successful in their work. Leadership focuses on the applicability of information to the work of intended users so that information is not only accessible and available but meaningful to the individual. “Apply Information” is about using IR to complete individual tasks (getting a job advertised, a travel voucher filed, or a statistical analysis run).

Thirdly, individuals reach out to each other and share information, knowledge, and ideas to create a higher level of productivity, encourage thought, and foster innovation. This area is intended to enhance capability for people to fully realize, through high-value collaborative work, the agency’s response to challenges and opportunities. Sharing ideas and knowledge is about complex group dynamics and idea generation.

Focus areas are further defined by goals, objectives, and progress indicators. Progress indicators help leadership measure whether the agency is moving (or not) in the desired direction to achieve the objectives and, ultimately, the goals. The indicators are not targets and are not intended to drive work accomplishment. Rather they show whether the right work is being done to achieve the desired outcomes. Progress indicators also provide further context and definition for the objectives to which they are tied.

4.2.1 Bridge Technology

Goal: People are more capable with seamless technology.

The customer should have just the right technology to be very capable in his/her work. The technology is neither a barrier nor hindrance to job accomplishment and does not take undue time or effort on the part of the customer. The technology is an extension of the individual and magnifies his/her capability by reflecting efficient work flows. Technologies are designed to interact where necessary. Systems integrate accessibility solutions that enhance functionality for all users.

Bridging Technology allows one type of radio to talk to another or a user to access multiple systems (e.g., Service First) without visible extra effort on the part of a user (seamlessly)

Objective 1: People's tools work.

IR tools can be accessed when people need them. Tools are those required by agency mission areas and include solutions, hardware, and software infrastructure. They operate correctly without requiring the customer to make unreasonable extra efforts. To meet this objective, systems must be secure from malicious attack. A focus here is that tools are interoperable, that is, they are fully compatible across agency and organizational boundaries, and that tools enable working easily with other organizations. Interoperability, compatibility, and integration are important to achieve this outcome. An example beneficial outcome is that safety is not jeopardized due to incompatibility or lack of interoperability among technology tools such as field radios. See the "Apply Information" focus area for objectives on collecting, using, and other skills related to information.

Progress Indicators:

1. Federal, State, and local partners interoperable capability increases by 50 percent.

Interoperable capability indicates that connections among systems are improved and can be more easily used across organizations. Examples would be improved and easier connections between agencies in the Department of the Interior and Forest Service (Service First) hardware, State agencies and the Forest Service, and the Forest Service and university systems. Multiple radios would not be needed in order to safely communicate across jurisdictions.

2. The number of technology-related safety incident reports is reduced by 50 percent.

Reducing the number of technology-related safety incidents shows that progress is being made toward interoperable communication systems.

3. The occurrence of IR security incidents is reduced by 75 percent.

Even as systems work increasingly well together (increasing hardware interoperability), a working environment secure from cyber attacks is maintained.

4. People can access tools when needed 99 percent of time.

Working and functional access to tools when needed indicates that systems are working and improving customer capability.

Objective 2: People have the right tools.

People have the hardware, software, and other tools that are appropriate for the work each person needs to accomplish, including working effectively with agency partners. Processes are in place to effectively capture the business needs of the agency. For example, the “technical approval” process currently in place (by which people petition for tools that are not part of “standard issue”) identifies gaps that are then addressed in a timely fashion.

Progress Indicators:

1. The standard inventory of tools meets 90 percent of customer business needs.

The standard inventory of tools meets nearly all business needs for each Forest Service mission area. For example, needs met for one deputy mission area to the exclusion of another does not satisfy the intent of the objective.

2. Work-around solutions are decreased by 75 percent.

A significant decrease in work-around solutions indicates tools are appropriate to the work to be done. Work-around solutions indicate customers are spending time devising ad hoc methods to accomplish their work because the tools do not meet their needs.



3. Technical approval requests are reduced by 90 percent.

A process is established to rapidly identify and bring into the corporate suite those tools needed by people to do their jobs. Technical approvals are reduced because tools are available to those who need them.

Objective 3: People’s work is advanced by innovative tools.

Innovations in IR are sought and implemented where they can enable the agency to better meet its mission. Some innovations are “game-changing” in that they can enable people to work in a different way (e.g., mobile technology enables work away from a desk), or enable fewer people to do a job previously done by many. Others are not quite so transforming, but result in more efficient or effective ways of doing existing work. Innovations should not be adopted until the right time, however, so that projected benefits (e.g., lower costs, efficiency) are realized and they are not negatively disruptive to how people accomplish their work.

Progress Indicators:

1. Ninety-five percent of innovation investment benefits are realized.

Tools work as designed with quantifiable measures to ensure accountability. Investment proposals need to quantify benefits so that these can be tracked as an indicator.

2. Agency investment in innovation increases by 50 percent.

Investment proposals need to specify appropriate milestones so that the timeliness of these can be tracked as an indicator.

4.2.2 Apply Information

Goal: People succeed by using information.

People are able to apply information to their work in a way that enhances their contribution to the agency mission. Not only do people have the right information tools available, but the tools are readily accessible with minimal time needed to comprehend and use the tools. The less time people need for understanding how to use information tools, the more successful they are at applying information to carrying out their responsibility in their area of expertise. Effective communication and feedback early on about new or changed tools that affect people will help people succeed.

Objective 1: People have access to information and tools.

People who work with information—creating data, using information, assembling information—are more successful in their work if they can readily find and gain access to the information they need, whether from internal or external sources. If this is not the case, people spend valuable time troubleshooting problems with the aid of the customer help desk or

their co-workers. People can work more efficiently with information if it is organized and accessible in alignment with how they work. For example, having in close proximity all the information needed for a particular analysis or within the same application aids the efficiency of accomplishing the analysis or reporting. Having the ability to effectively draw information from multiple sources for efficient use and analysis is equally important.

Progress Indicators:

1. The number of tickets related to accessing information is reduced by 50 percent.

“Tickets” refer to help desk incidents that are logged. Fewer incidents that are logged as “help with accessing information” indicates that people are having fewer problems with access.

2. The number of page views on Forest Service Web sites increase fourfold.

Information is more available and useful to the customer. Search engines should reliably direct people to the information they are looking for, thereby increasing demand for using agency Web sites as a primary information source.

3. Civil rights complaints that involve access to information are reduced by 95 percent.

Information is readily available to customers regardless of their abilities. Section 508 amended the 1973 Rehabilitation Act to specify many criteria to be met for Federal systems. These criteria are routinely incorporated in the design and development of new information and applications. An indicator that information is more fully available to more people could be the reduction in the number of complaints.

4. The percent of data elements that are reused across applications increases by 50 percent.

Data elements are the smallest and simplest pieces of information, still retaining meaning, that are created, stored, and used as part of information systems. They correspond, for example, to the contents of a field in a database or on a paper or electronic form. Redundant data elements are often an indicator that access to a system is difficult or problem-prone. It may also indicate lack of standard data elements or protocols, or lack of integration across applications. The customer works around this problem by duplicating the information in a location that is easier to access or use. In some cases, however, redundancy is purposeful and designed to ensure the information is reliable or readily available.

Objective 2: People have the skills and knowledge to use information and tools.

“People” refer to all Forest Service employees. Agency IR should be easy to use. The fact that IR include cutting-edge methods for accomplishing mission work, however, means that in order for people to be productive with information and tools they sometimes need to be trained in their use. The intended outcome with this objective is that the systems that people use will be as intuitive as possible, and that where the tools cannot be made intuitive or obvious, efficient training and help will fill the skill and knowledge gap.

Progress Indicators:

1. **Ninety percent of all employees are proficient in the use of relevant information.**

“Relevant” information is the information that customers need to do their job. All information is not relevant to each customer’s work or needs.

2. **The amount of time people spend on recurring information tasks is reduced by 25 percent.**

Training is focused on information tasks that are repetitive so people are efficient with tasks they perform frequently. As customers become more highly skilled in working with information, they will develop methods to approach their work so as to become more efficient.



Objective 3: Information resources are suitable for their intended use.

Information resources, such as software applications and the information for which they are designed, are compliant with accepted agency and industry standards. The term information in this context includes all facts or data that could be understood, used, or shared repeatedly. This objective may not apply as well to information that is transitory, or to research information that is part of experimental or developmental work where standards may be difficult to determine or establish. Applications should be designed so that they are aligned with mission work processes and minimize the “overhead” needed by people when conducting that work. An example would be eliminating the need to regularly transfer data from one application to another to accomplish a common process, or designing tools so that they are easy to use by resource specialists instead of requiring specialized application-specific knowledge.

Progress Indicators:

1. Ninety percent of Forest Service information is compliant with enterprise standards.

“Forest Service information” includes resources, such as software applications and the data used by them. “Compliant with” means conforms to, and “enterprise standards” means agencywide standards. A first step in devising this indicator would be developing a comprehensive set of standards. This objective may not apply as well to information that is transitory, or to research information that is part of experimental or developmental work where standards may be difficult to determine or establish.

2. Use of data supported by national applications increases by 75 percent.

Use of corporate information and applications—those designed according to agencywide standards—increases voluntarily because they are the best way to get work done, because they meet an enterprise business need, or because it is more efficient for there to be a single agency process. Use of locally developed applications (other than for limited research purposes) that do not contribute to an enterprise solution is minimal. Applications that are intended to be mandatory are designed so they are efficient to use.

3. The number of decisions remanded due to information deficiency is decreased by 25 percent.

As agency information quality and availability increases, information is decreasing as a factor in appeals and lawsuits.

4.2.3 Share Knowledge and Ideas

Goal: We excel by sharing.

The Forest Service has a tremendous potential to become a center for facilitating citizen-based input and discussion (e.g., using networks of contributors). Agency IR can enable public-sector involvement in gathering ideas for innovative solutions to challenges facing land management agencies, including those that span agency boundaries. The agency also has a duty to ensure that public information is transparently available.

Objective 1: Public information is available and visible.

The Government is accelerating efforts to become more transparent.⁸ Information and other IR that can be made publicly available and easy to use will build trust in the agency. This could reduce the amount of effort the agency's workforce expends responding to requests for information that could be made publicly available. Public information means any information useful internally or externally that is not otherwise restricted (e.g., personally identifiable information or site locations for cultural resource information).

Progress Indicators:

1. Ninety-five percent of electronic public information is online.

At any particular time, newly generated information intended to be online may not be online yet, thus we have not set this standard at 100 percent. Employees need to be able to easily and appropriately post information as part of their work.

2. People can find online public information 85 percent of the time.

Design and search capabilities allow people to find the information they need. This measures people's ability to find information online once it is posted. It does not refer to the capability of people to find public information that is not posted online.

3. Requests for offline public information are reduced by 50 percent.

Achievement of the objective outcome should be reflected in reduced requests for public information.

Objective 2: More and diverse populations are using Forest Service information.

Significant value can be provided to citizens by ensuring that a wide diversity of people can obtain information relevant to the discussion of land management issues.

⁸ For example Federal Chief Information Officer Vivek Kundra has as the first imperative for Government to be "open and transparent." <http://www.govtech.com/gt/653151>

Progress Indicators:

1. Participation by diverse audiences in Forest Service activities increases by 25 percent.

Forest Service activities refers to, for example, legally mandated and other land management planning, research studies, policy development, etc.

“Diverse” refers not only to demographics, but also to geographical and organizational characteristics.

2. Comments from diverse audiences increase by 25 percent.

The number of comments from new audiences, not traditionally heard from, increases.

3. Customer satisfaction with Forest Service public Web sites increases to 90 percent.

The American Customer Satisfaction Index, developed by the National Quality Research Center at the Ross School of Business, University of Michigan, will be used as the measurement tool. The Forest Service main Web site score was 72 percent in 2009. A score of 90 percent would be a stretch achievement considering that the highest score for any Federal agency is 91 percent.

Objective 3: Forest Service information creates dynamic interaction among people.

“Dynamic interaction” refers to the type of free-flowing discussion with, and among, agency constituents that leads to a better understanding and definition of agency issues.

Progress Indicators:

1. Social media are used in 75 percent of Forest Service collaborative processes.

The effective use of new media, such as social media, can enhance collaboration within the agency and with the public.

2. Collaboration in agency services and business processes increases by 25 percent.

Increased collaboration indicates the agency’s IR are enabling a more dynamic interaction among people within the agency and with the public.

3. Number of contributors of content to Forest Service Web sites increases tenfold.

This would indicate the agency is a recognized center for sharing information. The authors chose tenfold because processes are not in place to encourage widespread contributions to Forest Service Web sites.

4.3 Capacity Areas

To accomplish IR mission goals and objectives, there must be adequate capacity.⁹ Capacity refers to both the “hard” resources, such as money and infrastructure (easy to quantify), and the “soft” resources, such as knowledge and reputation. These soft resources are more difficult to quantify, but are nevertheless required to enable IR providers to do their work. For example, video teleconferencing (VTC) is a customer-facing information technology service and, therefore, its delivery is part of the IR mission work. VTC is supported by network capacity, which, if not adequate to agency demand, will cause VTC service interruption or poor quality. It is, therefore, necessary to think not only about the VTC equipment and location set-up, which a customer sees and uses, but also the network infrastructure that enables the VTC service for the user. The infrastructure should be “invisible” to the customer, but is a capacity area that must be considered by the IR provider.

This section of the IR strategic framework addresses seven areas of IR capacity needed to enable the agency to fully realize the benefit of the IR mission work. These seven areas are not ordered according to priority. Each capacity area has a goal, a set of objectives, and accompanying progress indicators, in a structure similar to that of the IR mission focus areas.

Agency leadership must recognize the importance of all seven capacity areas and recognize the need to address each. Additionally, specific leadership challenges are identified for three of the seven capacity areas that require additional focus. Each of these leadership challenges identifies the need to acquire leadership knowledge in specific IR areas, which is a prerequisite to making progress in Governance, IR Providers, and Money capacity areas.

Unless otherwise noted, throughout the following capacity areas, “leadership” generally denotes the National Leadership Council (NLC) because that is where accountability for agency mission accomplishment is vested.

4.3.1 Knowledge

Goal: Agency leaders have the knowledge to strategically manage IR.

Agency leadership is committed to attaining and maintaining the requisite awareness, expertise, and insight to leverage (i.e., use to agency advantage) IR.

⁹ The concept of focusing on IR “capacity work” as distinct from, and as an enabler for, IR accomplishment of mission and objectives was taken from the RRC Strategic Planning Model.

Objective 1: Agency leadership recognizes where knowledge gains can improve IR capability.

Leadership must stay attuned to its knowledge gaps so that these can be addressed prior to taking action. Specific challenges that face leadership, and that are identified in the appropriate capacity areas below, include the need to optimize IR governance (see Governance), be adept at projecting future IR solutions (see IR Providers), and to fully understand the implications of IR investment on agency mission delivery (see Money).

Progress Indicators:

1. NLC annually evaluates IR strategic progress indicators.

Progress indicators show whether desired outcomes of this framework are being achieved. Without attention to progress indicators, leadership is less knowledgeable as to how to adjust course. Leadership attention to this Strategic Framework intent indicates leadership is being attentive to and aware of IR effect.

2. NLC measures 95 percent of IR investment against industry standards.

“Investment” in this context includes all IR costs as outlined under scope (section 1.1) and is the aggregate of all of the agency’s IR spending.

Ninety-five percent is specified because there may not be industry standards for some areas of information resource spending. The standards are derived from commercial and (possibly proprietary) benchmarks, such as have been obtained for previous benchmarking studies.

3. The agency adopts more innovative solutions that substantially advance mission delivery.

Innovative solutions are those that enable new approaches to improve the accomplishment of the agency mission. As an example, the Forest Service installed a network of minicomputers in the 1980s that resulted in all Forest Service offices being connected for the exchange of email and other digital information. This occurred years before it was standard practice and created a new sense of agency community and more efficient methods of doing business. This indicator refers to the agency adopting innovations, not specifically the NLC, because it is dependent on the knowledge of both leadership and IR providers.

4.3.2 Governance

Goal: The Forest Service achieves its strategic IR objectives.

The structure, roles, and rules for IR activities, decisionmaking, and accountability must be in place so that the IR program of work can be carried out. For example, it must be clear who the “owners” are of the various objectives for the strategic framework. It must also be clear which of the objectives in the IR Strategic Framework are owned. See the IR Providers capacity area below.

Leadership Challenge: The NLC must optimize IR governance for agency mission accomplishment.

Given that previous efforts to effectively address IR governance have not endured, leadership should become more knowledgeable of IR governance models and their likelihood of success in the agency given current culture, beliefs, and capability. Knowledge in this area should be addressed before, or concurrently with, the pursuit of the following objectives.

Objective 1: A clear, integrated governance process drives IR decisions.

The focus of this objective is on defining a clearly understood process that integrates within and across deputy areas to ensure decisions for IR are well informed, result in cost-effective programs, and clearly advance the mission of the agency.

Progress Indicators

1. IR decisions made outside the IR governance process are eliminated.

Governance is well defined (leadership understands the process), accepted (the process makes sense), and working (everyone uses the process to make all IR decisions.)

2. Redundant governance processes to address IR issues are eliminated.

Multiple avenues to address the same issue no longer exist. Governance has been clarified so that decisionmaking and authoritative roles related to IR are not ambiguous or unnecessarily duplicative. An example of a redundant governance process is where two boards believe they have purview over the same issue.

Objective 2: Agency information resource decisions are consistent with the IR Strategic Framework.

The focus of this objective is to ensure that all decisions concerning IR are aligned with the IR Strategic Framework so as to promote the best use of agency resources and investments.

Progress Indicators

- 1. IR investment decisions align with strategic objectives 100 percent of the time.**

The agency complies with the strategic framework and drives leadership IR decisions with it.

- 2. All of the regions/stations/area have included the IR Strategic Framework in their strategic business plans, annual programs of work, or budget requests.**

Line officers play a critical role in ensuring that IR is field driven and supports agency decisions and activities. Line officers are also key in supporting IR as a resource to be managed and providing the financial resources to do so. This indicator demonstrates compliance with the strategic IR intent.

- 3. All Senior Executive Service (SES) level IR providers and SES line officers are rated on appropriate information resource performance elements in their performance standards.**

Agency leadership's accountability for IR is measured.

Objective 3: IR governance supports our ability to interact effectively beyond agency boundaries.

The agency is heavily influenced by decisions about IR made at upper levels of the Government. The intent of this objective is for leadership to work proactively to influence decisions so that the decisions have a more favorable impact and better meet internal agency requirements. This objective also involves an enhanced capacity to work with interagency and other partners to influence events toward a positive outcome.

Progress Indicators

- 1. IR solutions involving outside entities are mutually beneficial 100 percent of the time.**

This is a measure that the agency is engaging effectively and proactively with the U.S. Department of Agriculture, OMB, and others who influence our IR capability to ensure that decisions benefit the agency, its employees, and other involved entities.

- 2. Redundant Forest Service IR initiatives with external partners are decreased by 90 percent.**

This ensures that governance provides for a central coordination mechanism to reduce the number of redundant efforts within and among deputy areas with external partners. An example of redundant efforts would be multiple and uncoordinated efforts to resolve radio frequency and equipment problems with local, State, and Federal partners by numerous areas within the agency.

4.3.3 IR Providers

Goal: Everyone works toward managing IR.

IR providers, as well as anyone using or managing IR, work in concert to achieve the IR mission, supporting the agency mission.

IR providers are defined as anyone doing (providing) substantial IR activities. This includes leaders (Executive Leadership Team, NLC, CIO, GIO, and program directors), governors (Information Resources Board, Information Management Council, Geospatial Advisory Committee), along with information workers (Forest Geographical Information System coordinators, regional data stewards, Chief Information Office and Geospatial Management Office employees, data analysts, and others).

Substantial activities are defined by type as much as extent (i.e., an employee performing Web activities in a regional office as 20 percent of his/her job is an IR provider when fulfilling that role, as is an employee whose job is providing server support 100 percent of the time). IR providers are not limited to employees within the CIO organization. IR providers include those with line responsibility to achieve IR work and program (director) responsibility to define and mandate information requirements in individual program areas.

Leadership Challenge: IR providers are adept at projecting future IR solutions to advance the agency mission.

Given that IR have the potential to transform the ways the agency delivers its mission, it is imperative that IR are shifted from an impediment to an asset. This means optimizing the agency's investment, which demands that IR providers have the ability to consider future condition and build capability now to address it. The agency should consider this expertise as a priority prior to addressing the following objectives.

Objective 1: The professionals who manage agency information are respected.

This objective stems from a recognition that the value of IR providers and their work is underestimated within the agency, which has unintended consequences on the IR providers' ability to support the agency's mission.

Progress Indicators

- 1. A 90-percent increase in average number of highly qualified applicants responding to positions that involve managing information.**

An increase in the number of highly qualified applicants would be indicative of two things: (1) the reputation of the agency in IR makes it an employer of choice and, therefore, is attracting a greater number of highly qualified external applicants; or (2) the agency is valuing and investing in its IR employees, which results in a greater number and more highly qualified internal applicants.

2. All of the regions/stations/areas submit applications for the proposed annual Chief’s Award for management of information.

Establishes a Chief’s Award for IR and the numbers of individuals or groups nominated for the award increases, recognizing the value of IR contributions to the agency.

3. Ninety percent of IR providers have current skills to manage information.

Individual IR providers have the skills appropriate to their particular IR responsibilities. This provides a measure for agency investment in its workforce.

Objective 2: Agency leadership drives the IR strategic objectives.

For IR to successfully support the mission of the agency, IR must be driven by leadership.

Progress Indicators

1. The NLC evaluates IR strategic progress indicators on an annual basis.

Leadership (line) is actively engaged in IR through regularly scheduled reviews of the IR Strategic Framework and progress each year.

2. All of the regions/stations/areas have included the IR Strategic Framework in their strategic business plan, annual program of work, and/or budget request.

All leadership levels are measured when considering the degree to which agency planning reflects the intent of the IR Strategic Framework

Objective 3: Partnerships augment agency capacity to meet IR strategic objectives.

This objective focuses on working with partners to leverage agency capability to achieve IR objectives. The opportunities are only limited by our imagination. An example might be relying on another agency’s software that meets 90 percent of our needs instead of building our own and, thereby, saving resources to redirect to another priority. Another example is relying on partners to help distribute our information to make it more easily and readily accessible.

Progress Indicator

- 1. The number of projects leveraging partners' resources increases.**
Measures the degree to which the agency is augmenting its capacity to deliver IR objectives.

4.3.4 Physical Infrastructure

Goal: IR-related physical infrastructure is optimized to support IR priorities.

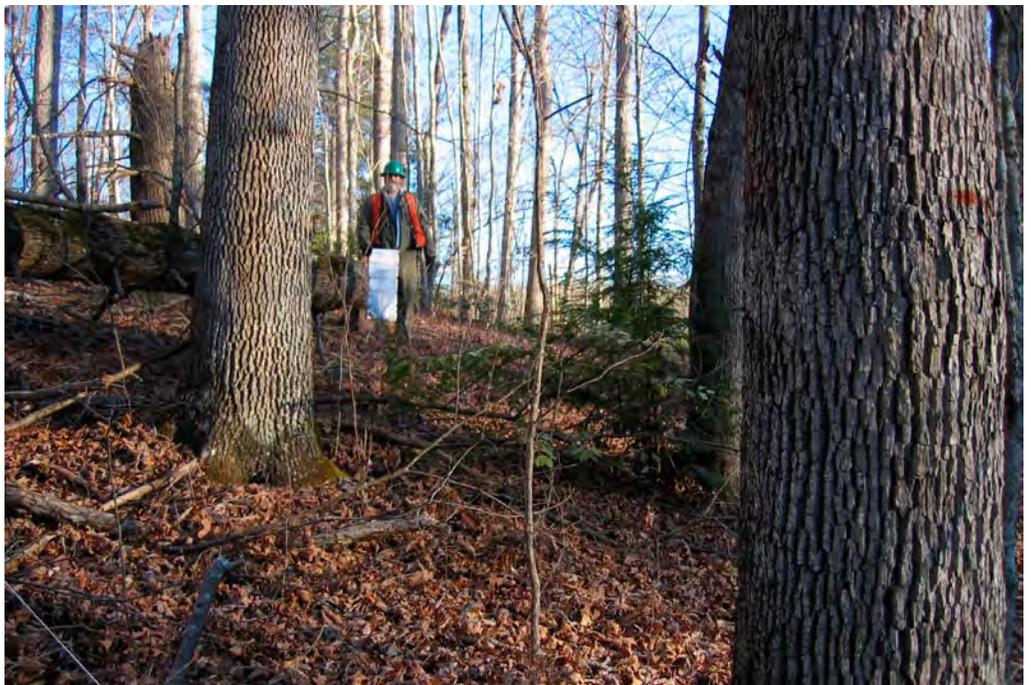
Physical infrastructure enables IR services, such as offices, vehicles, helicopter services/pad, controlled environments for equipment, etc. The agency ensures infrastructure is in place that allows IR providers to do their work in the most efficient and safe manner.

Objective 1: Facilities are maintained at a level to support IR staff and equipment.

Facilities must be maintained so quality work can be accomplished while ensuring that IR providers work in an environment conducive to high standards of achievement and employee morale.

Progress Indicator

- 1. Ninety-five percent of facilities are maintained to standard.**
“Standard” refers to Government (e.g., Office of Safety and Health Administration) or industry standards for technical facilities and for working environments for technical personnel. This includes safety and health standards.



Objective 2: Information resource facilities are located where most advantageous.

Locating information resource facilities must be done so the mission work can be accomplished while minimizing overall costs. Other factors considered in locating IR facilities are proximity to population centers with needed skills, and proximity to needed infrastructure such as network connections and transportation facilities.

Progress Indicators

1. **Transportation mileage is reduced by 15 percent.**

If IR providers must routinely travel long distances to operate or maintain facilities, cost for transportation is higher, IR productive time is reduced, and additional safety risk is assumed. Examples include long drives to maintain radio installations or to accomplish on-site work at remote offices or IR infrastructure facilities.

2. **Travel costs are reduced 15 percent.**

IR facilities are located according to need and where they can be efficiently maintained. While travel costs for people are often not a large factor in placing facilities, reduced travel costs for IR providers may indicate (and hold) some advantage for location of IR facilities in proximity of those operating, or maintaining, the facilities so that the total facility-related expenses are lower.

4.3.5 Information Infrastructure

Goal: Information infrastructure supports IR priorities.

Information infrastructure refers to the behind-the-scenes technology that enables IR providers to support customer capability. Examples are data center technology, test environments, server hardware, network connections, radio antennas, backend software systems to support application development (e.g., Oracle), global positioning system base stations, remote weather station equipment, other field monitoring equipment, security scanning equipment and so forth. This is distinct from physical infrastructure capacity, which is tied to buildings and other facilities because the needs and objectives are more specific and unique to IR services.

Objective 1: Corporate systems enable IR providers' service.

“Enable” means to ensure that the IR provider has the capability to address customer needs. This is distinguished from the Bridge Technology mission focus area objective 1, “People’s tools work” (section 4.2.1). This capacity area objective could include, for example, designing to ensure that focus area objectives can be met or modifying or retiring existing systems. This also means that systems function in such a way that behind-the-scenes systems operate “invisibly,” allowing IR providers to give value to people in their work without these systems being obvious or impeding agency mission work.

Progress Indicators

1. The number of duplicate tools (e.g., data centers, applications, etc.) decreases by 75 percent.

Duplicate tool sets needlessly commit resources (money, time, attention). For example, software license fees for tools that are overly redundant draws money from other uses. Tools for IR providers include test equipment, hardware, software, and even consulting time or services used to enable IR providers to address customer needs.

2. IR provider work-arounds are reduced by 85 percent.

Work-arounds often are less efficient methods to achieve work. Where IR providers use work-arounds, they are less apt to provide quality service and are likely not using resources (i.e., time, money) efficiently. An example of an IR provider work-around is leaving a system in a test environment for production use. Also, the objective is not to discourage innovation, but to actively recognize opportunities for innovation as opposed to inadvertently or negligently ignoring work-arounds that may be obscuring the provision of higher value service.

3. No more than 5 percent of corporate systems reach end-of-supported-life while in production.

“End-of-supported-life” refers to a time when manufacturers no longer support a particular technology (model, version). When systems reach end-of-supported-life, they are more costly and time-consuming to support. While it may not always be advantageous to be at a manufacturer’s current release due to cost or other factors, those decisions are consciously made and documented. An example would be that the Microsoft operating system (e.g., Windows XP) has reached end-of-supported-life and is no longer officially supported by Microsoft, yet it is still deployed on PCs.

Objective 2: Flexible corporate systems take advantage of emerging technology.

Progress Indicator

1. Deployment times of corporate systems are reduced by 50 percent.

If highly flexible back-end systems are employed, they can reduce the time to roll out new or changed systems and reduce cost because system changes are less disruptive and require less effort. The outcome desired is that IR providers do not need to commit as much money and time to responding to changing agency business needs because investments have been made in advance in up-to-date technology. The time to respond to a business need (with a new or changed system) does not exceed the lifespan of the need.

4.3.6 Reputation

Goal: People recognize agency IR as essential assets.

This capacity area addresses the way in which IR is viewed within and beyond the agency. This does not refer to the way IR providers are viewed, but rather to how the functionality, tools, and services of IR are viewed. The goal is for the contribution of IR to be perceived as an added value in advancing the agency's mission. The outcome of this capacity area is that appropriate stakeholders are aware of and support the IR function within the agency. Stakeholders perceive IR as an enabler of agency mission accomplishment.

Objective 1: Employees value IR, including service provided.

The intent of this objective is that employees value IR. Employees will value IR if they understand how it supports them in their work and if their expectations are met.

Progress Indicator

1. Expectations for IR services are exceeded or met 90 percent of the time.

People value how IR services meet or exceed their expectations for enabling individuals to excel at their work. IR is seen as a valuable, intuitive, and integral means to getting the job done.

Objective 2: Agency leadership relies on IR providers as strategic partners.

The desired outcome of this objective is that agency leadership values IR. While recognizing that one of the fundamental roles of IR is to deliver technology support, the desire in this objective is to ensure that IR is also recognized for its ability to help advance the agency's mission when involved early as a strategic partner in major agency initiatives.

Progress Indicator

- 1. The agency engages IR leaders in key endeavors 100 percent of the time.**

Leadership does not entertain strategic discussions on key agency endeavors without input from IR providers in how IR might be used to approach or advance the issue. As an example, new forest plan regulations require increased public collaboration that could benefit from new ways of enabling that collaboration through social media.

Objective 3: Public and partners place a high value on agency IR.

The intent of this objective is that agency partners and the broader public value IR. The agency is the preferred provider of information, as well as known for a place to share ideas.

Progress Indicators

- 1. Satisfaction with the agency's Web sites ranks in the top 10 percent of Federal Web sites.**

Satisfaction with the agency's Web sites indicates both the quality and diversity of the information and the accessibility of the design.

- 2. Partners' use of agency IR increases by 25 percent.**

Partners will use agency information if it is of consistently high quality, accessible, and downloadable for a variety of uses and is the best place to go for information about the national forests and grasslands.

- 3. External recognition increases for agency initiatives that are enhanced or enabled by IR.**

The agency will know that it is maximizing the return on its investments in IR to support the agency mission when public recognition for initiatives, such as the American Recovery and Reinvestment Act geospatial map and public Web site, is more frequent.

4.3.7 Money

Goal: IR funding produces desired agency results.

Agency leadership understands the funding required for IR to meet its mission. IR programs and projects are clearly understood in terms of the funding needed and allocated for them.

Leadership Challenge: The NLC must be fully aware of the implications of IR investment on agency mission delivery.

Implications of IR investment include the impact on agency mission delivery while considering all associated costs to avoid unintentional burden shift. Leadership should increase its knowledge of the IR impact on agency mission delivery, particularly the implications of funding decisions before or concurrently with the pursuit of the following objectives.

Objective 1: Agency leadership is aware of the total cost (indirect and direct) to manage information resources in the agency.

The connection is understood between funding allocations for IR and the outcome of the work that those allocations fund. The total cost of IR to meet agency mission needs is considered during leadership deliberations on how to carry out the agency mission.

Progress Indicators

1. Unbudgeted expenses are reduced by 95 percent.

There are both unplanned expenses, as well as burden shift, that this indicator should monitor. Poor planning, or planning that is not well communicated, results in unbudgeted expenses. In the worst cases, funds are expended without proper authorization.

2. IR financial expenditures outside the IR funding process are eliminated.

Forest Service units no longer incur expenditures on IR that are additional to funding allocated for IR. For example, expenditures would no longer be made on special-purpose software without an awareness that such expenditures were within the scope of intent of this strategic framework.

Objective 2: IR providers are accountable for managing IR funds to achieve stated outcomes.

Progress Indicator

1. Stated outcomes of IR business cases are realized 95 percent of the time.

All agency funds that support IR activities should be assessed based on a business case.

Objective 3: Funding sources sustain IR investments.

Progress Indicators

1. All long-term projects are budgeted for the life cycle of the project

Life-cycle management of IR investments is required by regulation and policy. Life-cycle budgeting includes all expected costs for the initiation, planning, development, procurement, deployment, operation, maintenance, shutdown, and dismantling of a project and investment.

2. Radio deferred maintenance is eliminated.

“Radio” includes shelters as well as towers. Radio was chosen for this progress indicator because it is a current priority and expected to remain so for the duration of the IR Strategic Framework process. There are other deferred maintenance areas that can also be addressed; additional indicators can be developed as needed.

5. Acknowledgements

5.1 Information Resources Board (IRB)

The IRB is an advisory board to the Executive Leadership Team and Chief Information Office, and is comprised of executive representatives from each Deputy Chief area, the National Leadership Council, and other key stakeholders. It is responsible for making recommendations on information resource investments, strategic opportunities, and investment monitoring. The IRB chartered the Information Resources Strategic Framework.

Chuck Myers, Deputy Chief, Business Operations (IRB Chair)

Donna Carmical, Chief Financial Officer (Alternate: Karren Alexander)

Dave Cleaves, Associate Deputy Chief, Research and Development (Alternate: John Sebelius)

Kent Connaughton, Regional Forester, Eastern Region (Alternate: Lee Nightingale, Deputy Regional Forester, Eastern Region, and Tony Dixon, Deputy Regional Forester, Rocky Mountain Region)

Ron Ketter, Assistant Director, Strategic Planning, Budget and Accountability

Jacqueline Myers, Associate Deputy Chief, Business Operations (Alternate: Ron Hooper, Director, Acquisition Management)

Tom Peterson, Director, Forest Management; Chair, Information Management Council, (Alternate: Rick Ulrich, Assistant Director, Ecosystem Management Coordination, Resource Information Group)

Chris Risbrudt, Director, Forest Products Laboratory, (Alternate: Lon Yeary, Assistant Director, Forest Products Laboratory)

Richard Sowa, Director, Engineering

Vaughn Stokes, CIO, Chief Information Office (Alternate: Doug Nash, Deputy CIO)

Robin Thompson, Associate Deputy Chief, State & Private Forestry (Alternate: Rob Mangold, Director, Forest Health Protection)

5.2 Information Resources Strategic Framework Core Team

The Information Resources Strategic Framework core team developed the framework on behalf of the Information Resources Board and the agency Executive Leadership Team.

Douglas Nash, Deputy CIO, Chief Information Office (Team Lead)

Dave Allen, Strategic Planning Coordinator, Strategic Planning and Performance Accountability, Strategic Planning

Mike Barrowcliff, Resource Information Manager, State & Private Forestry

Paul Bradley, Forest Supervisor, Francis Marion and Sumter National Forest, Southern Region

Ron Copstead, Program Management Advisor, Chief Information Office

Cindy Correll, Resource Information Director, Rocky Mountain Region

Michael Cummings, Acting Assistant Director for Governance, Chief Information Office

Hilda Ferguson, Resource Information Manager, Chief Financial Office

Dave George, Group Leader, Geospatial Services and Technology Center

Marsha Kearney, Director, Fire and Aviation Management, Southwestern Region

Garland Mason, Assistant Director, Pacific Southwest Station

John Pye, Program Specialist, eResearch, Science Quality Services

Kathy Stewart, Program Specialist, Chief Information Office

Sandra Watts, Resource Information Manager, Business Operations and Chief's Office

5.3 Reviewers

A broad range of reviewers from within and outside the agency reviewed the Information Resources Strategic Framework throughout its development. The reviewers and their diverse perspectives provided extremely valuable input and ultimately helped shape the final version of this document.

Sanjeez “Sonny” Bhagowalia, CIO, U.S. Department of the Interior

Paul Bradford, Forest Supervisor, Kootenai National Forest, Northern Region

Denny Bschor, Regional Forester, Alaska Region; Chair, Operations Customer Service Board

Jane Cottrell, Deputy Regional Forester, Northern Region

Karl Dalla Rosa, Program Manager, Cooperative Forestry

Debbie Everhart, Administrative Officer, Law Enforcement and Investigations

Linda Feldman, Program Analyst, Office of Deputy Chief for Business Operations
Don Fullmer, Assistant Director for Reorganization, Chief Information Office
Laura Hill, Information Technology Branch Chief, Fire and Aviation Management
Neal Hitchcock, Deputy Director for Fire Operations, Fire & Aviation Management,
National Interagency Fire Center
Jon Holladay, Chief Financial Officer, U.S. Department of Agriculture
Laura Kalifeh, Analyst, State & Private Forestry Planning and Budget, Southern
Region
John King, Business and Information Officer, Chief Information Office
Keith Lannom, Deputy Forest Supervisor, White Mountain National Forest, Eastern
Region
Ronnie Levine, CIO, Bureau of Land Management, U.S. Department of the Interior
Joe Mead, Forest Supervisor, Chugach National Forest, Alaska Region
Rosa Nygaard, Information Management Director, Northern Region
Rolando Ortegon, Assistant Station Director, Pacific Northwest Research Station
Michael T. Rains, Director, Northern Research Station
Frank Romero, Planning and Information Program Manager, Rocky Mountain Region
Dave Rugg, Data Manager, Northern Research Station
Frank Sapio, Director, Forest Health Technology Team, Forest Health Protection
John Sebelius, Staff Director, Science Quality Services
Bradley G. Smith, National Web Program Manager, Chief Information Office
Chris Smith, CIO, U.S. Department of Agriculture
William Wettengel, Development Architect, National Resource Information System
Anne Zimmermann, Director, Wildlife, Fish, and Rare Plants; Member, Operations
Customer Service Board

Appendix A—Information Resources Strategic Framework Statements

Vision: Our world community thrives as information connects people to the land.

Beliefs: Shared information builds trust and informs people; informed people make wise decisions; wise decisions sustain the land.

Mission: We deliver information the agency needs to fulfill its mission.

Focus Areas

The key mission areas of focus are organized to enhance the capability of people, both inside and outside the agency.

Bridge Technology

Goal: People are more capable with seamless technology.

Objective 1: People's tools work.

Objective 2: People have the right tools.

Objective 3: People's work is advanced by innovative tools.

Apply Information

Goal: People succeed by using information.

Objective 1: People have access to information and tools.

Objective 2: People have the skills and knowledge to use information and tools.

Objective 3: Information resources are suitable for their intended use.

Share Knowledge and Ideas

Goal: We excel by sharing.

Objective 1: Public information is available and visible.

Objective 2: More and diverse populations are using Forest Service information.

Objective 3: Forest Service information creates dynamic interaction among people.

Capacity Areas

The following capacity areas are considered areas of priority for the agency in which to develop the internal capability necessary to deliver the information resources mission.

Knowledge

Goal: Agency leaders have the knowledge to strategically manage IR

Objective 1: Agency leadership recognizes where knowledge gains can improve IR capability.

Governance

Goal: The Forest Service achieves its strategic IR objectives.

Leadership Challenge: The National Leadership Council must optimize IR governance for agency mission accomplishment.

Objective 1: A clear, integrated governance process drives IR decisions.

Objective 2: Agency information resource decisions are consistent with the IR Strategic Framework.

Objective 3: IR governance supports our ability to interact effectively beyond agency boundaries.

IR Providers

Goal: Everyone works toward managing IR.

Leadership Challenge: IR providers are adept at projecting future IR solutions to advance the agency mission.

Objective 1: The professionals who manage agency information are respected.

Objective 2: Agency leadership drives the IR strategic objectives.

Objective 3: Partnerships augment agency capacity to meet IR strategic objectives.

Physical Infrastructure

Goal: IR-related physical infrastructure is optimized to support IR priorities.

Objective 1: Facilities are maintained at a level to support IR staff and equipment.

Objective 2: Information resource facilities are located where most advantageous.

Information Infrastructure

Goal: Information infrastructure supports IR priorities.

Objective 1: Corporate systems enable IR providers' service.

Objective 2: Flexible corporate systems take advantage of emerging technology.

Reputation

Goal: People recognize agency IR as essential assets.

Objective 1: Employees value IR, including service provided.

Objective 2: Agency leadership relies on IR providers as strategic partners.

Objective 3: Public and partners place a high value on agency IR.

Money

Goal: IR funding produces desired agency results.

Leadership Challenge: The National Leadership Council must be fully aware of the implications of IR investment on agency mission delivery.

Objective 1: Agency leadership is aware of the total cost (indirect and direct) to manage information resources in the agency.

Objective 2: IR providers are accountable for managing IR funds to achieve stated outcomes.

Objective 3: Funding sources sustain IR investments.

Appendix B—Rebecca Reynolds Consulting Planning Model

Written by Rebecca Reynolds, used with permission.

The Forest Service Information Resources (IR) Strategic Framework is based on the strategic planning model provided by Rebecca Reynolds Consulting (RRC). This model is explained in brief here, with particular emphasis on concepts that were key to the development of the Framework. More detailed information on the RRC model and strategic planning can be found at <http://www.rebeccareynoldsconsulting.com/RRCStrategicPlanningModel>.

The RRC model is based on common strategic planning concepts such as vision and mission, but amplifies these through the use of questions that underlie each. The assumption here is that a leadership team can better write a compelling and agreed-upon vision statement if everyone first understands that the vision statement is an answer to a specific question. In fact, each part of the strategic plan – vision, mission, focus area, goal – represents an answer to a question.

Fundamental to the RRC model is that strategic leadership is based on the conversation among leaders that results in shared answers to a set of strategic questions. These questions drive meaningful discussion and result in answers that provide a framework for understanding, for decision-making and for addressing ongoing change. The aspects of the strategic plan and their underlying questions are provided in the RRC Planning Model Terminology list below.

The RRC model also describes the relationship between the different parts of a strategic plan. For example, the vision and mission answer different questions, but they work together in providing a conceptual frame for the work of the planning entity. Therefore it is both the answers and their relationship to each other that make the strategic planning statements meaningful. These relationships are depicted in the RRC strategic planning model diagram shown below (Figure 1).

In the diagram, the vision is shown in the clouds to represent its inspirational and future oriented qualities. The entity that is conducting the planning (the organization) is represented by the pyramid, which is surrounded by the world, indicating the dynamic set of forces having an impact on the organization. The pyramid's point is the mission statement that expresses in clear, simple language what the organization does to work toward the realization of the vision.

The pyramid rests on its foundation. The foundation represents the organization's capability to actualize its mission and mission-related (i.e., customer focused) work. The foundation is underground to show that this part of the strategic plan is about the needs of the organization, as opposed to the work it does to serve its customers.

Customers care about the mission work, but have little interest in the organization's capacity needs. However, capacity needs are vitally important to the health and longevity of the organization at large, and it is leadership's responsibility to maintain the appropriate balance between capacity and mission work.

One of the challenges to strategic planning is the language used for the concepts that make up the planning discussion and then delineating those concepts as the leadership conversation ensues. For this reason, RRC provides a diagram that acts both as a visual map of the planning territory and also as a conversation guide. If two people are conversing, and one is talking at the vision level while another is responding at the program of work level, this can appear to be a disconnect or even conflict. The RRC diagram enables groups to daylight what part of the plan is being discussed and to understand the relationship between all of the parts.

Another concept that arose in the development of the Forest Service IR Strategic Framework is the importance of alignment among and between different leadership levels within the same organization. In the RRC model, the set of leadership questions and resulting answers depicted in the diagram above can be addressed by any level or in any part of the organization. For example, "the organization" in one leadership dialogue could be the collection of entities within the agency responsible for IR, and in another leadership dialogue could be the agency at large, and in a third, the Chief Information Office. This concept of tiered plans based on a common conceptual model enables large organizations to synchronize between leadership levels and functional areas.

When using the RRC model for different leadership levels, it is useful to consider the leadership level above so that appropriate linkage can be made. For instance, the Forest Service mission statement is a leadership level above the IR mission statement. Therefore, not only must the two statements be compatible, they should also reflect this relationship. And since IR is in the agency's capacity – in other words, the sole purpose of IR is to enable the agency mission – by definition the IR mission should imply this support function.

The utility of the leadership conversation is applicable to all levels of leadership. All leadership bodies, whether at the national, regional, or local level, are benefitted by developing a common strategic leadership frame from which to make decisions and take action. Therefore, the linkage and alignment between these leadership frames is an important consideration.

Finally, the concept of accountability was central to the development of the Forest Service IR Strategic Framework. Accountability in relation to planning means that leadership establishes desired outcomes and then monitors progress toward them.

Progress toward outcomes is best indicated by a neutral measurement: something representative of the outcome that can be counted, in a specific time frame. A common pitfall in formulating progress indicators is measuring the output of the work activity used to move toward the outcome, rather than measuring the progress toward the outcome. This is akin to the difference between a global positioning device and an automobile odometer: one shows exact location, a direct indication of proximity to a destination, while the other indicates tire revolutions translated into miles, not a measure of being any closer to a destination. For this reason, the RRC model focuses leadership attention on formulating measures that will show progress toward the outcome.

RRC Strategic Planning Model Terminology

Note: Some RRC terms were changed to better suit the context of the Forest Service IR Strategic Framework. These changes are indicated in parentheses following the relevant term.

Vision: the organization’s highest level goal, its desired future, the answer to the question “Why does the organization exist?”



Figure B-1—RRC Strategic Planning Model Graphic

Belief: the organization’s beliefs about the world and how it works that inform its choice of mission, the answer to “What beliefs are fundamental to the organization’s work?”

Mission: the organization’s highest level activity, i.e., what does the organization do and for whom?

World Force: those circumstances and trends that have an impact on the organization and its work.

Values (Guiding Principles): the enduring standards for behavior and action that the organization considers essential to its character, heritage and legacy.

Organizing Principle: the basis for the structure of the organization’s mission work, for the organization’s mission areas of focus; e.g., geography, customer, aspect of mission, etc. The organization chooses its organizing principle to create greater focus or emphasis on certain aspects of its work.

Focus Area: one of the organization’s major areas of concentration of its mission or programmatic work.

Program of Work: all of the work the organization does to further its mission; the activities it does to serve its constituency (as distinguished from capacity work that it does to serve itself).

Capacity: all of the resources and capability the organization has and needs to deliver its mission.

Money: the capacity area dealing with acquiring the funds needed to operate the organization and the accounting of them.

People (IR Providers): the capacity area dealing with all of the people who work toward the organization’s mission, whether paid staff, contractors, of volunteers, and the issues related to them.

Knowledge: the capacity area that deals with broad institutional knowledge; what the organization knows about its work, its industry and the change it is trying to make.

Technology (Information Infrastructure): the capacity area that deals with all of the technological needs and operations of the organization.

Governance: the capacity area that deals with the organization’s decision-making structure, internal communication flow, its charters, policies, plans and other documents that express its governance model.

Image (Reputation): the capacity area that deals with the organization’s public perception, reputation, awareness; how others outside the organization view it.

Physical Plant (Physical Infrastructure): the capacity area that deals with all of the organization’s physical spaces and large-scale equipment.

Goal: the condition when the problem is solved or the need is met (i.e., the desired future).

Objective: an aspect of the goal, usually smaller in scope and achievable in a specific timeframe.

Program (a.k.a. Activities, Means, Tactic): the action taken to move from the current state to the goal/objective (the desired future).

Outcome Measure (a.k.a. performance or progress indicator): the tangible evidence that progress is being made toward achieving the goal/objective.

Appendix C—Effective Leadership Progress Indicators

Indicators are expected to measure progress on the desired objective outcome. To the extent that they measure outputs of programs or activities, the indicator is of less value to leadership. Leadership uses indicators as one aspect of a determination as to whether they have chosen the right course of action to attain the desired objective outcome. Managers, on the other hand, use output measures to monitor production, attainment of service levels, and completion of projects.

Criteria for progress indicators:

- 1. Relevant:** Is the indicator relevant to the mission or capacity objective and to the outcome the indicator is intended to measure?
- 2. Important:** Does the indicator measure an important aspect of the outcome?
- 3. Understandable:** Is the indicator understandable to leadership?
- 4. Are program personnel able to easily manipulate and, thereby, “game” the indicator?:** The progress we are trying to measure is typically a higher level outcome of the work, whether we are meeting our objective, not the output of one or many information resource providers.
- 5. Unique:** Does the indicator duplicate or overlap with other indicators? To the extent that it does, it becomes less important.
- 6. Comprehensive:** Does the list of indicators cover the aspects of a desired outcome that are important to customers?
- 7. Feasible:** Can we collect reasonably valid data on the indicator?
- 8. Cost effective:** While cost of collecting data for an indicator can be a factor, sometimes the most costly indicators are the most important.

Appendix D—Glossary

Terms defined as used in this document.

Applications—Applications are software programs specifically designed and developed to automate or facilitate a work flow and with which users directly interact. Natural Resource Information System and Paycheck are examples of applications. The software used to create the application (Oracle for example) is included in the definition of systems. See also Systems and Tools.

Bridge—In the context of this framework, bridge means that technology and related services provide a seamless link between the person being served and the work that they do, much the way that a road bridge seamlessly links the portions of a road on either side of a river or lake.

Chief Information Office(r) (CIO)—The acronym can refer to either the person holding the responsibility and authority for information resources, as described in the Clinger-Cohen Act or Office of Management and Budget A-130, or to the organization that is headed by that person.

Collaboration—The act of two or more people (internal or external to the Forest Service) working together to achieve a common end. When used with “tool,” as in “collaboration tool,” it refers to a software application, a technology device, or other tool to provide or enhance the ability of people working together. Examples are Lotus Sametime, LiveMeeting, or social media applications. Technology devices include video teleconferencing systems and telephone conferencing.

Customer—see People.

Enterprise System—An enterprise system is a data processing system that is available for people across the entire organization.

Enterprise Standard— An enterprise standard is an established norm or requirement that applies to systems that are available for people across the entire organization.

Facilities—These are buildings and other fixed structures that house or enable information resources. Examples include computer rooms, offices, outbuildings, and structures.

Information Assets (IA)—These are stored data that are pertinent to agency work. They include documents, files, and information stored within file shares, folders, databases, applications systems, and services used to create, access, store, and transmit this information. They also include any other representation of this information regardless of medium (e.g., paper, diskette, CD-ROM, and magnetic tape).

Information Management (IM)—This is the collection and management of information from one or more sources and the distribution of that information to one or more audiences. Management means the organization of and control over the structure, processing, and delivery of information.

Information Resources (IR)— This is the broad collection of technologies, capabilities, and services related to information. The Clinger-Cohen Act of 1996 defines information resources as “information and related resources, such as personnel, equipment, funds, and information technology” and information resources management as “the process of managing information resources to accomplish agency missions and to improve agency performance ...“(44 USC Sec. 3502 (6) and (7)).

IR Provider—Information Resource (IR) providers are people doing (providing) substantial IR activities. This includes, for example, agency executives, those that serve on IR governing bodies, forest geospatial information center coordinators, regional data stewards, Chief Information Office and Geospatial Management Office employees, data analysts, and many others.

People—The term people refers to individuals, whether internal or external to the agency, served or affected by those Forest Service personnel who provide information resources (IR providers). People as used here is synonymous with customer. Some individuals carry two roles: IR provider and IR customer.

Progress Indicator—Indicators are expected to measure progress on the desired objective outcome. Leadership uses indicators as one aspect of a determination as to whether they have chosen the right course of action to attain the desired objective outcome.

Public Information—This is information that has been cleared for release to the general population.

Seamless—Seamless denotes that systems and tools work smoothly together, with people being able to quickly accomplish their work with a minimum of tools required to accomplish the full array of work to meet the agency mission, and with minimum of additional learning required to move from one tool or system to another when multiple tools or systems are required.

Standards—A standard is an established norm or requirement. It is usually determined through an accepted process, documenting formally and establishing uniform criteria, methods, processes, and practices. Standards are particularly important in ensuring that systems and tools are interoperable, meet customer expectations, and promote efficiency.

Systems—Systems are the technologies (hardware and software) that support resident applications. The internal workings, especially of the software, are invisible to users. Systems are the building blocks or foundation for delivering user applications (e.g., servers, networks, laptops, routers, Oracle, Twitter). See also Applications and Tools.

Technology—Technology is a broad concept that deals with human as well as other animal species' usage and knowledge of tools and crafts, and how it affects a species' ability to control and adapt to its environment. With respect to this strategic framework, technology refers to the “tools and crafts” (hardware, software, systems, and processes) that are the subject of information resources.

Tools—The broadest category of information resource devices that assist users in accomplishing many functions. Tools include systems and applications. See also Applications and Systems.

Universal Design—Universal design refers to the design and production of products that promote equal opportunity for use by individuals with or without disability. See also the University of Minnesota Web design glossary entry for “universality” at <http://www.d.umn.edu/itss/support/Training/Online/webdesign/glossary/u.html>.

Appendix E—Acronyms

CIO – Chief Information Office(r)

CTO – Chief Technology Officer

GIO – Geospatial Information Office

IA - Information Assets

IM – Information Management

IR – Information Resources

IRB – Information Resources Board

NLC – National Leadership Council

OCIO – Office of the Chief Information Officer

OMB – Office of Management and Budget

SES – Senior Executive Service

USDA – United States Department of Agriculture

VTC – Video Conferencing

Appendix F—Applicable Law and Policy

A large number of laws affect the work of the Forest Service. Some of these laws guide the agency in what it does, and others guide the agency in how it accomplishes its work.

For examples and links to law and policy regarding the mission work of the agency, especially in the area of planning, see <http://www.fs.fed.us/biology/planning/index.html>. Planning is an area of the agency's work that has a large number of opportunities for information resources to provide solutions.

For law and policy reference in how the agency conducts its mission in the area of electronic government see http://www.usa.gov/Federal_Employees/Electronic_Government.shtml#vgn-policy-legislation-vgn.

Below are some of the law and policy directly affecting information resources.

Clinger-Cohen Act of 1996; OMB Circular A-130, Managing Information Resources (see also http://www.whitehouse.gov/omb/circulars_a130_a130trans4/).

Clinger-Cohen essentially requires agency heads to maximize the benefits and manage the risks of acquiring and operating information resources to accomplish the mission. The Office of Management and Budget directed Departments (and the U.S. Department of Agriculture directed the Forest Service) to establish and operate an investment review board comprised of senior managers to oversee implementation of A-130 direction and advise the Chief on matters of information technology investments.

Section 508 (see also <http://www.section508.gov/>).

Section 508 of the Rehabilitation Act Amendments of 1998, signed into law on August 7, 1998 (Public Law 105-220), as a part of the Workforce Investment Act of 1998, requires that when Federal agencies develop, procure, maintain, or use electronic and information technology, they shall ensure that the electronic and information technology allows Federal employees with disabilities to have access to and use of information and data that is comparable to the access to and use of information and data by Federal employees who are not individuals with disabilities.

Section 508 also requires that individuals with disabilities, who are members of the public seeking information or services from a Federal agency, have access to and use of information and data that is comparable to that provided to the public who are not individuals with disabilities. By law, Section 508 enforcement provisions apply to all electronic and information technology procured on or after June 21, 2001.

The absence of universal design requires all employees to gain familiarity with unique requirements for a host of independent applications, impairing productivity. The agency must compete and retain a diverse workforce through a time of critical succession planning. Attracting and retaining a contemporary and highly mobile workforce in today's environment requires modern technologies that can be easily understood, taught, and learned. Information systems need to have a reliable, consistent, and intuitive interface to ensure information resources are responsive to a diverse workforce. Systems that integrate universal designs for accessibility will directly enhance employee productivity and satisfaction. Proactively integrating a universal design approach will position the agency to provide information resources that accommodates all citizen interests as our mission connects with universities, associations, partners, and individual customers and clients.

Privacy and Security (see http://www.usa.gov/Federal_Employees/Electronic_Government.shtml#vgn-privacy-security-vgn).

Appendix G—Additional Background Reading Material

(Note: This list may also be found on the internal Forest Service Web site at <http://fsweb.wo.fs.fed.us/ir-strategy/readinglist.shtml>.)

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